

1 1. A method comprising:
2 illuminating a carbon nanotube with a first laser
3 beam and a second laser beam transverse to one another; and
4 monitoring the effect on transmission of light
5 from said first laser beam as the polarization of the
6 second laser beam is changed.

1 2. The method of claim 1 wherein monitoring the
2 effect on transmission of light includes monitoring the
3 intensity of light transmitted.

1 3. The method of claim 1 including passing a carbon
2 nanotube through a microfluidic chip.

1 4. The method of claim 3 including passing said
2 carbon nanotube through a passage through said chip.

1 5. The method of claim 4 including providing a
2 waveguide through said chip transverse to said passage and
3 illuminating said waveguide with said first laser beam.

1 6. The method of claim 1 including trapping a carbon
2 nanotube using said second laser beam.

1 7. The method of claim 6 including moving said
2 carbon nanotube using said second laser beam.

1 8. The method of claim 1 including determining
2 whether the carbon nanotube reorients in response to a
3 change in polarization of said second laser beam.

1 9. An apparatus comprising:
2 a first laser;
3 a second laser;
4 an optical trap wherein said first laser and
5 second laser extend transversely to one another;
6 a device to change the polarization of said
7 second laser; and
8 a detector to detect the effect on light from
9 said first laser when the polarization of said second laser
10 is changed.

1 10. The apparatus of claim 9 wherein said device is a
2 diffractive lens.

1 11. The apparatus of claim 9 wherein said detector is
2 a photodetector to detect the intensity of transmitted
3 laser light from said first laser.

1 12. The apparatus of claim 9 including a mirror to
2 reflect light from said second laser into an optical trap
3 in a direction transverse to the direction of propagation
4 of light from said first laser.

1 13. A microfluidic chip comprising:
2 a substrate;
3 a waveguide extending through said substrate in a
4 first direction; and
5 a passage formed in the surface of said chip, to
6 transmit carbon nanotubes through said waveguide, said
7 passage arranged generally transversely to said waveguide.

1 14. The chip of claim 13 including a set of at least
2 two inlet channels to said passage to allow liquid and
3 carbon nanotubes to be mixed in said passage.

1 15. The chip of claim 13 including at least two
2 output channels to receive two different types of carbon
3 nanotubes.